

AMENDMENTS TO THE DRAWINGS

Please enter the seven (7) Replacement Sheets of Drawings submitted herewith,
showing Figures 1-13.

REMARKS

Objections to the Specification and Drawings

The Examiner objected to the drawings as not in conformance with the requirements of 37 CFR §1.84, and because they fail to show element “2(b)” as described on page 7, line 19 of the specification. Applicant submits herewith seven (7) Replacement Sheets of drawings in compliance with 37 CFR §§ 1.84 and 1.21(d). Element “2(b)” is identified in the drawings as element “25”. The specification has been amended at page 7, line 19 to conform to the drawings and the remainder of the specification.

The Examiner objected to the Abstract on formal grounds. Applicant has amended the Abstract in accordance with the Examiner’s suggestions. A clean copy of the amended Abstract is also submitted herewith in accordance with 37 CFR §1.72.

Applicant has further amended the “Detailed Description of Embodiments” section of the specification to improve the clarity of the disclosure and/or correct obvious errors of form. For example, reference numeral “32” is used repeatedly in the specification to refer to the fastener/bolt, but is not used in the drawings to refer to this part. Instead, the fastener/bolt is indicated by element “31”. The part referred to as a “fastening device 31” has been renamed as a “drive device 32”. This is to avoid confusion with the fastening device/bolt 31 described earlier in the specification and illustrated in Figures 3 to 6. It is believed that as well as improving the clarity of the disclosure, the change is consistent with the original disclosure of the specification, which, for example, in original claim 1 referred to the part as a drive means.

No new matter has been added by any of the foregoing amendments.

Claim Amendments

Claim 1 has been amended to remove the recitation that the tool is a one-way drive and instead to specify a bi-directional drive tool. This amendment has been made as a clarification and does not add new matter to the application. The tool shown in Figures 2 to 6, which illustrate elected species II is described as being bi-directional on page 9 of the specification in lines 6 to 18.

Claim 1 has been amended to specify that the split aperture defines a torque-applying gripping surface. This surface 25 is shown in Figures 2 to 6 and it is believed clear from a consideration of Figures 3 to 6 and the related description that the surface 25 grips the head of the bolt 31 and applies a torque to it.

Claim 1 has been amended to remove the recitation of a drive means for driving a fastener. The tool shown in Figures 2 to 6 does not require a drive means since the torque-applying gripping surface 25 defined by the split aperture is shaped to directly engage the head of a fastener. This is clearly shown in Figures 3 to 6.

Claim 1 has been further amended to specify that the cam means comprises two slots and respective pivots that extend through the slots. The slots are specified as diverging away from the split aperture. These features were previously recited in claim 3 and that the slots diverge as specified in the claim is clearly shown in Figures 5 and 6.

Claims 2-3 and 8-12 are cancelled without prejudice.

Claims 4-7 and 13-17 have been amended to improve form and to be consistent with amended claim 1.

New claims 27 – 44 have been added to more particularly define the invention. No new matter has been added by any of the claim amendments.

Claim 27 further defines the torque-applying gripping surface 25, which is shown in Figures 2 and 6, as comprising a plurality of surface portions 26 that define a polygonal aperture. This is also described on page 8 of the specification in lines 3 to 5.

Claim 28 further defines recesses 27 separating adjacent portions 26 of the torque-applying gripping surface. These recesses are shown in Figures 2 to 6 and described on page 8 of the specification in lines 5 and 6.

Claim 29 further defines that the recesses are arcuate in cross-section can be seen in Figures 2 to 6.

Claim 30 further defines the flexible head 2 shown in Figures 2 to 6 as irremovably fitted to the elongate handle 3 since it is secured to the handle by means of rivets 11, 11a.

Claim 31 further defines that the elongate slots are each closed slots having opposed ends, which can be seen in Figures 5 and 6.

Claim 32 is a new independent claim. All of the features of this claim are present in the drive tool shown in Figures 2 to 6. Figures 2 to 6 show:

a bi directional drive tool for applying a drive torque – the tool is described as being bi-directional on page 9 of the specification in lines 6 to 18;

a flexible head 2 having an internal torque-applying gripping wall 25 defining an opening and a slot 20 (indicated in Figure 5) extending from the opening to an outer wall of the flexible head;

an elongate handle 3 that is pivotally connected to the flexible head by a cam mechanism which comprises two apertures 21, 22 defined by the flexible head and respective pivot members 11a that are fixed with respect to the elongate handle (in the illustrated embodiment the pivot

members 11a are fixed with respect to the handle by being fixed to plate 12, which is fixed to the handle 3 by rivets 11 (see also the specification on page 8, lines 1 and 2); and

that the pivot members 11a extend through the respective apertures 20, 21 (see Figures 5 and 6).

That the apertures 20, 21 define respective elongate camming surfaces that diverge away from the opening such that when an input torque is applied to the elongate handle a force that tends to close the slot is applied to the flexible head 2 via the cam mechanism to cause the application of a gripping force by the torque-applying gripping wall 25 can be seen in Figures 5 and 6, which show that the camming surfaces defined by the slots 20, 21 diverge away from the opening and the action of the cam mechanism is described in the specification on page 9 in lines 6 to 12 (see in particular lines 9 to 12).

Claim 33 further defines that the flexible head comprises a generally C-shaped arcuate portion with ears 16, 17 projecting from it can be seen in Figures 5 and 6. The slot 20 defined between the ears 16, 17 is indicated in Figure 5.

Claim 34 specifies that the slot extends between the elongate apertures. This is shown in Figures 5 and 6 (slot 20 extends between the apertures 20, 21).

Claim 35 recites that the flexible head 2 comprises a first portion that defines the torque-applying gripping surface 25 and opposed ears 16, 17 that extend from the first portion (see Figures 5 and 6). The slot 20 defined between the ears is indicated in Figure 5. That respective surface portions of the elongate handle 3 are operable to bear against the ears according to the direction of the input torque applied to the handle will be apparent from the specification on page 9 in lines 6 and 7 in conjunction with Figures 3 to 6.

Claim 36 further defines a resiliently biased detent member 42 carried by the elongate handle as shown in Figures 7 and 8 and Figures 12 and 13.

Claim 37 defines respective recesses 23' defined in the outer wall of the head 2 as shown in Figures 12 and 13. In Figure 13 it can be seen that when the elongate handle 3 is pivoted out of alignment with the slot 20, the detent member 42 will engage in a slot 23'. This is also described in the specification in the paragraph bridging pages 13 and 14.

Claim 38 defines a second flexible head 2 overlying the first flexible head can be seen at each end of the tool shown in Figure 1.

Claim 39 specifies that the torque-applying gripping wall 25 comprises a plurality of segments 26 arranged such that the opening in the head is polygonal, as shown in Figures 2 to 6. Recesses 27 between adjacent segments are shown in the same Figures and described on page 8 of the specification in lines 5 and 6.

Claim 40 recites that the recesses are curved in cross-section as shown in Figures 2 to 6.

Claim 41 specifies that the torque-applying gripping wall is a curved wall as shown in Figures 7 to 9 and 12 and 13. It is described in the specification on page 11 in lines 21 to 23.

Claim 42 defines drive devices 32 having a curved external wall and defining a polygonal aperture for engaging a fastener as shown in Figures 7 and 8 and described in the specification between page 11, line 21 and page 12, line 5.

Claim 43 defines a drive device having a curved external wall and including a post insertable into a socket that is engageable with a fastener as described in the specification on page 12 in lines 7 to 11.

Claim 44 is a further new independent claim. All of the features of this claim are present in the drive tool illustrated in Figures 2 to 6. Figures 2 to 6 show:

bi-directional drive tool for use in applying a torque to a fastener - the tool is described as being bi-directional on page 9 of the specification in lines 6 to 18;

a flexible head 2 having a first portion that includes an internal torque-applying gripping wall 25 that defines an opening and first and second projecting portions 16, 17 extending radially outwardly with respect to the opening from the first portion, the projecting portions defining a slot 20 that extends from a first open end that opens into the opening to a second open end at an outer wall of the flexible head;

an elongate handle 3 pivotally connected to the flexible head, the elongate handle having a longitudinal axis and being pivotable to a first side and a second side of a neutral position in which the longitudinal axis is aligned with the slot (see Figures 2, 3 and 5 for neutral position); and

a cam mechanism comprising a first aperture 22 defined in the first projecting portion 17 and disposed on the first side of the neutral position, a second aperture 21 defined in the second projecting portion and on the second side of the neutral position and respective pivot pins 11a extending through the apertures 21, 22 and fixedly connected to the elongate handle (via plate 12). The apertures 20, 21 define respective elongate camming surfaces diverging away from the opening in the form of the respective inner sides of the apertures.

That when an input torque applied to elongate handle 3 causes the handle to pivot to the first side of the neutral axis the pivot pin 11a in the first aperture 22 engages an end of the aperture to act as a fulcrum and the pivot pin 11a in the second aperture 21 moves along the camming surface of the aperture away from the opening applying a force to the second projecting portion 16 that causes the slot 20 to narrow to close the opening to cause the internal torque-applying gripping wall 25 to grip for applying said input torque to a fastener is explained

in the specification between page 8, line 21 and page 9, line 12. It will be appreciated that when the handle is pivoted to the second side, the pins 11a, in the two apertures 21, 22 act in the opposite way so that the closing force is applied to the projecting portion 16. This is explained in the specification on page 9 in lines 13 to 18.

Election of Species B

In response to a restriction requirement mailed August 11, 2006, Applicant elected the species shown in Figures 2 to 6, which illustrate the drive tool recited in current claims 1 and 4 to 7. As demonstrated by the explanation of the basis for the new claims above, Figures 2 to 6 also illustrate the drive tool recited in new claims 27 to 35 and 39 to 41. Applicant submits that all of the claims to the non-elected species should be allowed as appended to and requiring all the limitations of generic claims 1 and 32, which are illustrated by Figures 2 to 6. In this connection, it is believed clear that the drive tool of each of species A to G has all of the features of claims 1 and 32. That the camming action of the drive tools which do not constitute the elected species is the same as that of the elected species is clear from the illustrations and the following portions of the specification:

Page 10, lines 3 to 9 – states that operation of species A tool is the same as for species B tool.

Page 11, lines 4 to 6 and lines 12 to 14 – states that operation of species C tool same as species B tool.

Page 13, lines 6 to 8 – states that operation of species D tool is the same as previously described tools.

Page 13, lines 15 to 18 – states that operation of the species E tool is the same as previously described tools.

It will also be noted that on page 14 starting at line 16 it is stated that the polygonal internal surface of the species A and B tools could be replaced with the curved internal surface of the species C to G tools.

Claim Rejections

Claims 1-4 stand rejected under 35 U.S.C. §102(b) as being anticipated by Hurtig (U.S. Patent No. 4,488,461). Applicant respectfully requests reconsideration of this rejection. Hurtig does not disclose a split aperture as recited in claim 1 as-filed. Referring to Figure 8 of Hurtig, which is a part sectional view of the embodiment of Figures 6 and 7, while the aperture may be irregularly shaped, it is readily apparent that there is no split aperture as recited in claim 1 of applicant's invention. Furthermore and referring to claim 1 as currently amended, Hurtig does not disclose or remotely suggest diverging slots provided in the flexible head and engaged by pivot members fixed relative to the handle so as to apply a force that tends to close the split aperture and increasingly tighten a grip applied by the toque-applying gripping surface as more toque is applied to the handle.

In contrast, Hurtig teaches a tool that operates in an entirely different way to the claimed tool. In Hurtig, a non-flexible head 64 is provided with a continuous aperture 78 that is not split. The tool taught by Hurtig relies on bringing the camming surface 76 defined by the handle 62 to bear against the fastener in order to turn the fastener. There is nothing to suggest slots and pins that provide a camming action to close a split aperture to increase the grip applied by a torque-

applying gripping surface. Therefore it is submitted that Hurtig does not disclose, teach, or suggest the invention as claimed in claims 1 to 4.

Claims 1, 2, 5, 6 and 8 stand rejected under 35 USC §102(b) as being anticipated by Heinrich (DE 1603875). Applicant respectfully requests reconsideration of this rejection. Regarding claim 5, Heinrich does not show two plates mounted on opposed sides of an elongate handle 2 and defining a recess in which a part of the head 1 is received. It appears that the Heinrich handle simply widens at its end to provide a seating surface for the flexible head 1.

With regard to claim 1 as currently amended, Heinrich does not disclose or remotely suggest a bi-directional tool having diverging slots provided in its head and respective pins that extend through the slots. Heinrich discloses a simple one-way wrench that is not bi-directional. One pin 11 of the Heinrich wrench engages in a recess 5 in the head 1 to serve as a fulcrum and the other pin 10 bears against an external wall of the head that converges rather than diverges outwardly with respect to the split aperture. In order to reverse the direction of operation of the Heinrich wrench, the head 1 must be removed from the handle 2 and turned over so that the pin 10 engages in the recess 5 and the pin 11 engages the external wall of the flexible head. It is therefore submitted that claims 1, 5, 6, and 8 are patentable over Heinrich. Because claim 2 has been cancelled, the rejection of claim 2 is no longer relevant.

Claims 1, 6 and 7 stand rejected under 35 USC §102(b) as being anticipated by Walter (DE 599,682 C). Applicant respectfully requests reconsideration of this rejection. It is submitted that this rejection is unfounded. It is believed clear that the circumferentially spaced surfaces extending radially outwardly from the inner ring surface of the flexible head taught by

Walter extend in parallel and there is no disclosure or suggestion of their diverging outwardly as recited in claim 7. With regard to claim 1 as currently amended, Walter does not disclose a bi-directional tool having two diverging slots and respective pins extending through the slots. The Walter tool is a one-way tool that operates in the same manner as the Heinrich tool with the head pivoting about a single pivot b to cause an external surface a^2 of the head to bear against a surface provided on part a^1 of the handle. Therefore claims 1, 6, and 7 are allowable over Walter.

For the foregoing reasons, Applicant submits that claims 1, 4-7, 13-17, and 27-44 are patentable over the prior art, and in condition for allowance.

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Respectfully submitted,

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